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for finding the polar axis might have a field of view of 3°, and the exact position of *Polaris* within the circumference might be determined by a micrometer adapted for the purpose; this would admit of the requisite corrections for refraction.

"Such a telescope attached in the same manner as a finder to the polar axes now used in observatories would serve readily to test the accuracy of their position, while in the Fraunhofer form of equatoreal it may be substituted for the polar axis, when we should obtain the advantage of making the axis of one telescope the fixed axis about which another may be made to revolve.

"As differences in the temperature of the water occasion some little variation of rate in the quantity delivered by the syphon, the rack-work should be graduated for these differences, or self-regulating clepsydras may be constructed either by using two cisterns and two syphons (one of the latter acting as a supply pipe to the cistern carrying the weight connected with the telescope), or if one cistern only be used by a thermometer carrying a piston attached to the syphon, the bulb of the thermometer being fixed under the lower surface of the float.

"If the telescope be not well balanced about its centre of gravity, more or less weight will be required to move it, as its direction is varied. If, however, the float cover a large surface of water, and the syphon, when adjusted for the mean temperature, be at some depth below this surface, no perceptible variation of rate will be occasioned.

"The action of the clepsydra produces a smoothness of motion not to be surpassed; and I feel assured it might be adapted to the requirements of an observatory, more especially as its rate may be so readily brought under the immediate control of the observer."

Description of a Miniature Observatory erected at No. 200 *High Street, Exeter.* (Latitude 50° 43′ 19″·45 N., and longitude 0^h 14^m 7^s W.) By Messrs. Ellis and Son.

(*Communicated by Dr. Lee.*)

This Observatory is built over workshops at the back part of the premises in the above locality, about 40 feet above the ground, and at 175 feet above the mean level of the sea, which elevation commands the northern horizon (48° below pole) as well as 36° of south declination. The upper chamber is 3 feet 1 inch wide (except that portion which falls into the return of the chimney, and which is a little wider), 5 feet 8 inches long, and 6 feet high. It has north and south doors, a chicket window, forming a convenient desk and cupboard, and a skylight, in the direction of the meridian, which is readily opened by means of a short lever. The eastern wall is painted; the others canvassed and papered. The doors and meridional opening are painted black. The roof being flat is covered with zinc.

The transit, a 20-inch instrument by Troughton, is mounted on

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a bracket built into the eastern wall, and is as steady as can be expected at such a height in the midst of a crowded city.

A Dent's dipleidoscope, furnished with a telescope, is fixed to the same bracket.

A sidereal clock stands, or rather is hung, in the south-east corner, and an electro-magnetic dial, by Shepherd, occupies the space between it and the south door. The latter shows Greenwich mean time, and is connected with an electro-magnetic pendulum and another dial, in a distant part of the premises, on the ground-floor.

The thermometers, by Negretti and Zambra, have wet and dry bulbs. A patent maximum and a minimum thermometer are arranged on a stand outside the north window.

A Glaisher's rain-guage is erected 10 inches above the roof, and its cistern is also placed outside the north window.

A standard barometer, Barrow's, No. 25, is hung against the eastern wall of the lower platform, and is 164 feet above the level of the sea.

This paper was accompanied by a plan of the Observatory, and a few observations of Comet III., 1853, by Mr. H. S. Ellis.

Notes on the Appearance of the Zodiacal Light in the Spring of 1853. By T. W. Burr, Esq.

The atmosphere being exceedingly transparent, and the horizon clear round my residence at Highbury, I had since January kept watch for the appearance of the zodiacal light, but it was not until Friday, 11th March, that I was able to distinguish it. On that evening the sky was perfectly cloudless and the air calm. The sun and moon had both set by 7^h 30^m mean time, and the yellowness of the twilight having also disappeared, the desired luminosity became visible in the western part of the heavens. It was a very long cone or lenticular-shaped beam of nebulous milky light, starting from the western part of the horizon, but having more of its base to the north than south of that point. The angle made with the horizon was considerable, being about 45°, and the breadth at the base about 30°. These measures were only approximate estimations. The upper edge of the cone was less distinct than the lower, which was well defined. The point could be traced very nearly to the Pleiades, where it was lost. This group was then about three hours past the meridian, and about 50° in altitude. The point was not rounded off in the manner usually described and drawn, but sharper, so that the whole light looked much like half of the nebula in *Andromeda*, as drawn in Sir J. Herschel's *Outlines of Astronomy*. The stars α, β, and γ *Arietis* were immersed in the beam of light; *Saturn* shone brightly, just beneath its lower edge; and the principal stars of *Andromeda* were beyond the northern boundary. The light appeared generally to follow the line of the ecliptic, and to extend about 65° from the sun's place.

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